WHAT IS CLAIMED IS:

1. A method for detecting defects in a lithography mask blank, comprising:

(a) applying a photoresist layer to the mask blank;

(b) exposing the photoresist layer with radiation having a wavelength and angle of incidence such that the photoresist layer is fully exposed by the combination of direct and reflected radiation in areas of the mask blank in which there are no defects;

(c) developing the exposed photoresist layer to remove the fully exposed photoresist from the mask blank; and

(d) detecting photoresist remaining on the mask blank after development of the photoresist layer to detect defects in the mask blank.

2. The method of Claim 1 wherein the photoresist layer includes a photoresist material selected from the group of photoresist materials consisting of PMMA and UV-6.

3. The method of Claim 1 wherein the photoresist layer includes a fluorescent material incorporated therein.

4. The method of Claim 3 wherein detecting the photoresist remaining on the mask blank after development includes illuminating the mask blank to excite the fluorescent material in the photoresist remaining on the mask blank after development of the photoresist layer.

5. The method of Claim 4 wherein detecting the photoresist remaining on the mask blank includes detecting the excited fluorescent material using an optical microscope.

6. The method of Claim 1 wherein the mask blank is an EUV mask blank.

7. The method of Claim 1 wherein exposing the photoresist layer includes exposing the photoresist layer with an X-ray radiation source.

8. The method of Claim 7 wherein exposing the photoresist layer includes exposing the photoresist layer with a Cu K-alpha X-ray source.

9. The method of Claim 1 wherein exposing the photoresist layer includes exposing the photoresist layer with an EUV radiation source.

10. The method of Claim 1 wherein detecting the photoresist remaining on the mask blank includes detecting the photoresist remaining on the mask blank using an atomic force microscope.

11. A method for detecting defects in an EUV lithography mask blank, comprising:

(a) applying a photoresist layer including a fluorescent material incorporated therein to the EUV mask blank;

(b) exposing the photoresist layer with radiation having a wavelength and angle of incidence such that the photoresist layer is fully exposed by the combination of direct and reflected radiation in areas of the mask blank in which there are no defects;

(c) developing the exposed photoresist layer to remove the fully exposed photoresist from the EUV mask blank;

(d) illuminating the mask blank to excite the fluorescent material in the photoresist remaining on the mask blank after development of the photoresist layer; and

(e) detecting the illuminated photoresist remaining on the EUV mask blank after development of the photoresist layer to detect defects in the mask blank.

12. The method of Claim 11 wherein the photoresist layer includes a photoresist material selected from the group of photoresist materials consisting of PMMA and UV-6.

13. The method of Claim 11 wherein exposing the photoresist layer includes exposing the photoresist layer with an X-ray radiation source.

14. The method of Claim 13 wherein exposing the photoresist layer includes exposing the photoresist layer with a Cu K-alpha X-ray source.

15. The method of Claim 11 wherein detecting the photoresist remaining on the mask blank includes detecting the photoresist remaining on the mask blank using an optical microscope.

16. A method for detecting defects in a reflective material, comprising:

(a) applying a photoresist layer to the reflective material;

(b) exposing the photoresist layer with radiation having a wavelength and angle of incidence such that the photoresist layer is fully exposed by the combination of direct and reflected radiation in areas of the reflective material in which there are no defects;

(c) developing the exposed photoresist layer to remove the fully exposed photoresist from the reflective material; and

(d) detecting photoresist remaining on the reflective material after development of the photoresist layer to detect defects in the reflective material.

17. The method of Claim 16 wherein the reflective material is an EUV lithography mask blank.

18. The method of Claim 16 wherein detecting the photoresist remaining on the reflective material includes detecting the photoresist remaining on the reflective material using an atomic force microscope.

19. The method of Claim 16 wherein detecting the photoresist remaining on the reflective material includes detecting the photoresist remaining on the reflective material using scattered light.

20. The method of Claim 16 wherein the photoresist layer includes a fluorescent material incorporated therein.

21. The method of Claim 20 wherein detecting the photoresist remaining on the reflective material after development includes illuminating the reflective

material to excite the fluorescent material in the photoresist remaining on the mask blank after development of the photoresist layer.

22. A lithography mask blank prepared for the detection of defects therein, comprising:

(a) a lithography mask blank including a reflective substrate and an interference stack formed on the reflective substrate to enhance the reflectivity thereof; and

(b) a photoresist layer formed on the interference stack and having a fluorescent material incorporated therein.

23. The lithography mask blank of Claim 22 wherein the fluorescent material is selected from the group of fluorescent materials consisting of Azure B, Cresyl Violet perchlorate, Rhodamine B, and Rhodamine 6 G.